A Journal Devoted to Healthful Living

HEALTH

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Editor: U. KRISHNA RAU, M.B., B.S., M.L.A.

Associate Editor: U. VASUDEVA RAU, M.B., B.S.

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1956—A RETROSPECT

A NEW YEAR has begun and we are reminded of the new responsibilities and new opportunities ahead with the hopes and wishes for something better and something different too in the matter of putting to greater and more effective use the lessons we learnt in the past. Let us take stock of the important events of the last year. Though it is not possible to catalogue them and much less discuss them all at length, we may review the outstanding ones with their potentialities.

The international situation towards the end of the year gave considerable room for anxiety, particularly the events in North Africa and the Middle East. The attention of the world's greatest statesmen has been directed to the Suez Canal crisis, and the Hungarian problem. The repercussions of the situation have greatly affected peaceful pursuits and the general economic affairs of many nations. The UNO's efforts to solve the tangle amicably has not yet borne fruit. Speaking at Laxmibainagar Congress Session on the 6th instant, Prime Minister NEHRUJI deplored the attempt 'to fill power vacuum in the Middle East' and said that the cold war was once again being intensified and was spreading more and more. The events of the last few months have given a big jolt to the hopes entertained by the people all over the world for permanent peace. "We do not know what may or may not happen in the new year," said he and this surprise statement makes us all feel nervous about things to come. We may yet hope that the clouds will clear up and leave the horizon clear for the establishment

of abiding peace for human welfare and progress.

In South East Asia, however, one is able to record a position of progressive stability and the development of democratic systems of Government. Relations with China and Japan have continued to be cordial and we can be proud of the fact that Bharath has been largely responsible for the peaceful progress so far achieved in South East Asia, though the disturbed state of the political firmament in the Middle East is likely to place a check on ordered and continued progress in that region.

In our own country the reorganization of the States is an outstanding event of importance; this followed the announcement of the Second Five-Year Plan which visualizes great reforms and considerable progress in every direction at a huge cost. Industrialization is progressing at a rapid rate; the Union and State Governments have been making arrangements to safeguard the health of the large number of people taking part in this great national programme.

The budget allotment for health projects in the Second Plan must be considered quite liberal. The confidence of the people in their leaders is indeed great to the point of their feeling that success is bound to attend the programmes of work to be undertaken and the leaders on their part look up to the people to co-operate actively putting up with inevitable hardships.

The many schemes planned and now under active implementation under the N.E.S. and Community Projects promise well and the rural population is assured by the authorities of better food supplies, better living conditions, greater facilities for medical relief and generally of a brighter future. But we feel that these very welcome schemes and pious hopes may not be fulfilled without the practice of austerity and great discipline among the workers.

Let us hope that the new year before us will see the fruition of some at least of these widely planned and ambitious schemes.

HEALTH is entering on its thirty-fifth year of useful life and we offer our readers our cordial good wishes and grateful thanks for their hearty co-operation.

SKIN TROUBLES

Whether it is boils, acne, pimples, eczema, *psoriasis* or just a muddy, sallow complexion, this is the time of the year to tackle it. Edit your diet to leave out chocolate, cocoa, all fried fare, and rich, greasy dishes; eat only oven-toasted wheatmeal bread or cereals or cereal biscuits for breadstuffs; use the seasonal abundance of fruit freely, have a salad a day, and balance with milk, and some cottage cheese; drink fruit juices often; and eat dried fruits for sweets. At the same time, air and sun your skin as often as possible, and rub down with powdered sulphur and boracic powder nightly.—(*Dermatology*, Nov. '56).

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OUR DAILY BREAD

(Some interesting facts to know)

DAVID GUNSTON

BEFORE 1820 in Europe there was no such thing as white bread, and upon its introduction it remained for many years, and was regarded as, an expensive luxury. Bread's progress has actually been one of slowly decreasing colour intensity :—from the darkest brown-black to light brown, and ultimately to the snowy-white product generally regarded as the ideal today. The usual unpopularity of brown bread amongst the majority of the population, derives not really so much from its flavour or keeping qualities, as from a kind of dietetic snobbery. Formerly, the darker one's daily bread, the lower was his social status.

Wheat.—Contrary to popular belief, British-grown wheat does *not* make the best bread flour, and British millers have for centuries had to use wheats from abroad. Our bread is nowadays nearly always baked from a mixture of these flours, and the miller's primary job is to select several different types of grain and blend them, so that each contributes its best qualities to the flour.

Canadian wheat is noted for its "strength"—which results in a bold and attractive loaf of good volume. Australian wheat makes a very fine white flour that handles well, whilst Argentine ("Plate") and *Indian* wheats are hard and strong with especially *good flavours*.

The blending of these and all the other wheats currently available to the British miller (which include French and Russian) is the result of continuous experiment and long experience, and contributes just as much to the perfection of a slice of bread on the plate as does the raising and proving of the dough and its final baking.

A wheat grain has in all five layers of tough skin which together, when removed, form bran, usually seen as a mixture of irregular light brown flakes. The human digestive tract cannot assimilate much of this fibrous substance, though of course it has valuable laxative properties as bulk, or roughage. Inside these protective skins is the endosperm, or solid white part of the grain. This produces, when rolled and purified, first the familiar semolina, then after further crushing and screening, plain white flour. Subsequent siftings through fine silk material, and bleaching with chemical agents, make this whiter still, with no trace of bran, or of the third main part of the berry, the all-important germ, or embryo. This is the part of the grain that starts to grow into a new plant, the source of new life to the planted seed, and of vital nutritional value if the grain is milled into flour. Although it forms only about one-fiftieth part of the whole berry, the germ contains much of the wheat's valuable food properties, notably vitamins and fat.

It is around the inclusion of the germ, or its removal to make "pure" white bread, that all the brown-*versus*-white arguments are centred. It is worth remembering, in passing, that our ancestors had no such problems, no need for such controversy. To them flour was flour, and bread was bread, stone-ground, locally-milled, often with added grit from the millstones for good measure as well! Only since we started, trying through a growing fashion, to improve bread flour by taking part of it away, has there been any need to look at the problem from this angle.

The kinds of flour currently used by bakers do not fall simply into white and brown categories, either. All grades and types of flour are allied to the rate of extraction (that is, the proportion of the total weight of unground wheat which is converted into flour). This is around 70 to 75 percent for the whitest flour, about 80% for national white flour, which has some of the bran and a fraction of the germ still in it.

There are a number of proprietary brown, or starchless flours available to bakeries, which consist of mixtures of the various ingredients of the berry, with perhaps malt flour, soya flour, aerating chemicals and even rye and barley flour. Most, however, consist of about three parts ordinary plain white flour, and one part cooked preserved wheat germ. The germ is roasted with salt to prevent it becoming rancid, and the salt content is usually sufficiently high to make it unnecessary for the baker to add more as in his normal baking practice. In this way the finished brown flour contains many times the normal germ content of whole-meal, but some kinds are also devoid of bran, which is completely removed and used as animal food.

Additional ingredients.—So much for the ingredients of the wheat berry and the various types of flour available. The standard ingredients of the resultant loaf will of course be better known. In addition to yeast and water, there is the all-important salt, which not only makes bread flavoursome and appetizing, but also controls the speed of its yeast-action. Other orthodox ingredients include fats and oils (American bread has far more added fat than the British), malt, milk or milk powder, sugar, soya flour (2 or 3 lbs. per 280 lb. sack having been normal for a number of years now), treacle, and fruit like sultanas and currants.

Nowadays, of course, bread also contains other artificial ingredients that make it a far less simple foodstuff than it was formerly, and which lead to misgivings in many people's minds. Most notable is calcium carbonate, or chalk, known in the trade as *crata preparata*, the addition of which (14 oz. per 280 lb. sack) to all except wholemeal flours is now compulsory. This is done not chiefly to improve the flour, which it does, but to counteract the alleged properties of phytic acid in flour of preventing correct bone-formation.

In addition, white flour must also be enriched with vitamin B_1, nicotinic acid and iron, but most flours today are also treated by the millers with substances like acid calcium phosphate, ammonium and potassium persulphates, potassium bromate and benzoyl peroxide, all except the last-named as mineral improvers. The much-discussed use of nitrogen trichloride, or *agene*, as both a bleaching agent and a flour improver, having been discontinued in the U.S.A., is now to be dropped in Britain, thanks largely to the agitation over many years of food-standard improvers, led by Lord Sempill. But white and low-extraction brown flours will undoubtedly now always be compulsorily improved with synthetic vitamins and nutritive mineral matter, whilst the addition of further mineral improvers independently by millers will doubtless continue unless restricted by law. At the same time, it should be remembered that often the quantities of these additions are very small, sometimes as low as ¼ oz. to ½ oz. per 280 lb. sack of flour.

As a major foodstuff bread is important for its content of the vitamin B complex, and above all as the most important item of a balanced diet for the supply of carbohydrates. Sweet or salty, crumbly or stiff, enriched or plain, brown or white, bread is still life.—(*Health Horizon*, Autumn, 1956).

The Present Status of Human Male Infertility

A critical analysis of the present-day accepted opinions on male sterility, reveals that the minimum of 60,000,000 spermatozoa per cc. as defined by Meaker is too high because in a large series of men of proved fertility the figure was found to be in 29 per cent below the 40 millions and in 5 per cent below the 20. It is, therefore, considered that the lower limit could be placed at 20 millions. Further, the sperm motility is considered (to the minimum of 83 million per total ejaculation as suggested by Farris) to be too high; a 100 per cent activity is extremely rare, 80 per cent is excellent and 60 per cent is good, while 40 per cent would be closer to the critical limit. The quality of the movement, in other words, its speed and forward projection is what really matters most. As far as the morphology is concerned, the limits of 25 per cent or 20 per cent of anomalies to indicate sterility or diminished fertility, are also too rigid, and more importance should be given to the association of morphologic anomaly and diminished motility. Finally, there is no evident relation between the period of sexual abstinence and the improvement in the quality of the semen, because even if the number of sperms increases, their motility diminishes. It is more rational to maintain a rhythm of frequent coitus with the idea of having spermatozoa always in the female genital canal.—(*Am. J. Obst. Gynaecol.*, *69*: 1256, 1955, abstracted in *Int. Jour. Fertility*, 1956).

New Arms for Amputees

German scientists at Heidelberg University's Orthopædic Clinic are reported to have developed a "pneumatic arm" for amputees. Powered by a motor which uses carbon monoxide, the device is said to have a greater range of motions than anything else now in use.

BLOOD-PRESSURE READINGS

(What do they show?)

J. D. RATCLIFF

THE doctor slips a fabric cuff containing a rubber bag round your arm. It is connected to a hand-bulb and a pressure gauge. Inflating the bag, he measures your blood-pressure.

It gives a ready check on the condition of the circulatory system; it safeguards women during pregnancy by warning of toxæmias; it spots kidney disease and other troubles. It is perhaps one of the most revealing of all medical tests.

In the body's blood-supply system, pressure must be maintained by the heart and arteries to force blood through ever-narrowing channels; from arteries to smaller arterioles to capillaries so small that microscopic blood cells have to pass through in single file. Without this pressure, blood could not be delivered to nourish the body's millions of hungry cells.

Scores of times a day blood-pressure varies widely to meet the body's demands. In moments of anger or fear it may rise by 50 per cent. It rises at meal-times, falls when we are sleepy. It is low in the morning before activity begins; rises with strenuous exercise or when we worry; drops when we have a warm bath or read a diverting book.

Such perfectly normal fluctuations are not the concern of the test. It seeks to determine the stresses acting on the circulatory system in times of repose and rest.

By inflating the cuff the doctor squeezes the arm's main artery tightly enough against the bone to shut off the flow of blood. When, listening with his stethoscope, he hears the sound of the pulse-beat disappear, he begins slowly to deflate the cuff. As the pressure on the artery is released, he takes a pressure reading at the instant when the pulse can once again be heard. This is the *systolic* pressure, the maximum pressure in the arteries when the heart is contracting. Measured in terms of the height of the column of mercury it will support, it may read 120 millimetres, 130, 140 or more.

Continuing to deflate the cuff, a second reading is taken at the moment when the sound of the pulse alters in pitch and becomes dull and muffled as the heart begins its fractional second of rest before its next contraction. This is the *diastolic* pressure, the minimum pressure maintained in arteries between heart-beats. This reading is usually in the 80 to 90 millimetre range.

The two readings are then expressed with systolic over diastolic—*e.g.*, 130/190. It is not safe to rely on a single test, however, as several factors may cause falsely high readings, even worry about the test itself. The tendency therefore, is to make several readings and take the lowest figures.

The largest systolic pressure is the figure used by most laymen when speaking of their

blood-pressures. But the lower diastolic pressure is of really greater concern to doctors, as that tells what stresses are on the heart between beats, when it is supposed to be getting its vital rest. In a sense, diastolic pressure is a measure of the quality of rest the heart is getting.

Our body has many mechanisms for controlling blood-pressure. In times of anger or danger, the little adrenal glands astride the kidneys shoot out their potent hormone, adrenalin, which constricts arteries, causing the pressure to rise—just as it does in a hose when the nozzle is screwed down. Thus the body is given quick energy to face emergency situations.

A second control is the carotid sinus in the neck, a slight widening of the main artery to the head. When this little pouch becomes distended with blood, its nerves flash a message to the brain. The brain responds by ordering muscles in the arterial walls to relax and the heart to slow. The result is a fall in pressure. If the sinus becomes too empty of blood, opposite orders go out: the heart is speeded, artery walls tighten and pressure rises. Knowledge of the carotid sinus's role in regulating blood-pressure has solved many baffling medical problems.

Small tumours which over-stimulate the adrenal glands can cause high blood-pressure which however, falls again to normal once the tumours are removed. Kidney disease, too, has a hypertensive (pressure-raising) effect, as do various toxæmias of pregnancy.

Such specific ailments have been found to be the cause of high blood-pressure in about ten per cent of cases. In the other 90 per cent, blood-pressure may soar high for no apparent reason. These cases are labelled "essential hypertension,"—cause unknown.

It now appears, however, that a variety of stresses—worry, constant fatigue and so on—can tighten artery walls and raise the pressure. If the stress continues, the pressure stays at elevated levels, imposing a burden on the heart and the arteries. Often hearts enlarge to meet the increased load of work. Arteries lose their normal rubbery elasticity, become hard and possibly choked with lime deposits.

Unless warning of the situation is given by the blood-pressure test, and steps are taken to correct it, the heart may fail from over-work, or a corroded artery may rupture in the brain and cause a stroke. Or a clot may form on the roughened wall of one of the heart's arteries, causing an obstruction to the flow of blood; this is what is called "coronary thrombosis."

Occasionally blood-pressure tests reveal abnormally low readings. The cause *may* be traced to a specific ailment; anæmia, infection, malnutrition. But usually no root cause can be found. Although victims often complain of lassitude and fatigue, low blood-pressure predisposes to a long and healthy life.

What is high blood-pressure —or low?–Once, anything above 150 systolic or 95 diastolic was considered high, anything below 110 systolic or 70 diastolic, low. The latest studies indicate that these values are too flexible, and that many people who once would have been considered in poor health are in reality normal.

Until a few years ago, physicians could do little to correct high blood-pressures. They might suggest a low-salt diet, since salt tends to elevate pressures in some cases. Almost certainly they would suggest more rest and relaxation. Today specific treatments are available: Hexamethonium and related drugs are often highly effective, as are the new "tranquillizing" drugs—mainly derivatives of Rauwolfia, the Indian snakeroot. In a recent experimental study a combination of two drugs, one from each of these groups was found to lower high and dangerous pressures in three out of four patients.

Thus, a new and more hopeful picture of high blood-pressure is emerging. Today, no one need therefore, fear the blood-pressure cuff. This revealing medical test is one of the great protectors of human health and is one of man's best friends that would bring sheer confidence and comfort.—(Condensed from *Today's Health*, via *R.D.*).

Cosmetics and the Skin

(Contd. from p. 283, Dec. '56 issue of Health)

II

Face creams.—The mere male justly complains of being bewildered by the various appellations of face creams.

Face creams are variations of oil-in-water and water-in-oil emulsions; most are oil-in-water. *Cleansing creams* may be oily creams or emulsions. *Cold creams* are mostly oil-in-water emulsions, evaporation of the water giving the cooling effect. Formulæ vary, *e.g.*, water, almond oil, bee's-wax or spermaceti. *Complexion milks* are diluted cleansing creams (*e.g.* mineral oil, acetyl alcohol, stearic acid, triethanolamine). A typical vanishing cream contains:—

Stearic acid	...	15·0
Potassium hydroxide	...	0·7
Glycerin	...	8·0
Water	...	76·3

A *foundation-cream* serves as a base on to which face powder may cling. It differs from a face cream in containing more glycerin and added powder. The addition of further powders, such as titanium dioxide, zinc oxide, kaolin, coloured lakes and iron oxides, gives a powder cream. More modern foundation-creams comprise oily anhydrous fatty bases or mixtures of oils, fats, waxes and pigmented powders. They are useful for disguising blemishes and may have some place in dermatology, as in scarring of lupus erythematosus, capillary nævi and rosacea. The

thick grease-paint type of make-up, with a vegetable oil like gingelly oil, powder, oxycholesterol and agents such as triglycerol stearate which disperse the powder through the vehicle, are also useful for this purpose.

All-purpose '*sport-creams*' may contain lanolin, cholesterol and its esters, and combine in one preparation the functions of a foundation-cream, a cleansing cream, 'skin-feeding', and massage.

So-called '*skin-foods*' may be simply fatty and emollient-like lanolin creams, but may be marketed as vitamin or hormone creams.

Hormone-creams.—The advertising force of the argument that face creams containing vitamins and hormones must rejuvenate the aging skin is an obvious attraction. Vitamins incorporated into creams are probably *without* material effect. They do no harm but the vitamins can be more effectively given by mouth in proper dosage.

The common use of œstrogens in 'hormone-creams', and the similarity of the chemical structure of œstrogen steroids and of the carcinogenic tar hydrocarbons naturally begets the question of their safety. Local application of œstrogens can cause local temporary proliferative effects in the epithelium, and *absorption may lead to uterine bleeding and breast swelling*; this has followed inunction with dienœstrol ointment. Eidersberg (1947) concluded that the amount of œstrogen in hormone-creams was not sufficient to produce systemic effects, his conclusions being based on urinary output and normal vaginal smears in treated and control patients. Release uterine bleeding might be produced, however, in menopausal patients receiving internal œstrogens if, in addition, a hormone cream provided œstrogens as well.

The use of œstrogens in hormone-creams is probably quite without risk in the concentrations normally employed (Peck and Klarmann, 1954). Current medical opinion in this country is in agreement with Behrman (1954), who found that hormones in cosmetic creams were without objective or subjective effect in the series studied. As the degree of improvement was equal with both hormone and non-hormone applications, he concluded that the improvement noted in dry skins came from the emollient effect of the creams and not from the hormones. As has been pointed out, the senile changes of loss of elasticity, with the thinning and wrinkling of 'crow's feet' due to degradation of connective tissue fibres, are mostly confined to those parts of the body exposed to light; such changes are unlikely to be affected by local treatment. (Oestrogens have been used in the topical treatment of acne with reported success (Shapno, 1951), but opinions are not all favourable.

Cosmetic creams seldom cause skin irritation and probably do good, especially in dry or soap-intolerant skins. Even in greasy skins modern emulsions exclude theoretical 'blockage of pores',

but paraffinic constituents, if impure, would be capable of producing comedones and acne-like folliculitis. Those with acne or greasy skin would do well to use soaps for cleaning unless intolerant of these. Skin irritation is usually the result of sensitivity to the emulsifying agent, the preservative or the added perfume. Lanolin or lanolin alcohols may cause sensitization dermatitis (Sulzberger, Warshaw and Hermann, 1953). Perfume is the commonest irritant, and may cause photosensitization, acute attacks occurring as soon as the face is exposed to sunlight. The skin is characteristically bright red, swollen often with periocular œdema.

In dermatitis from face creams, the appearance of the face closely resembles that of the tar worker spraying tar on the road in the summer months who has 'the smarts'. The dermatitis appears like a mask on the areas covered by the cream. When the patient is asked to demonstrate the method by which she applies her face cream, the outline of the dermatitis faithfully fits the pattern traced. Areas of clear skin occur under the chin, on the sides of the neck and on the forehead. In chronic cases, patches of dry irritable circumscribed dermatitis occur around the mouth and nose or appear as areas of brownish pigmentation. *Central pigmentation of the face in women is often caused by perfume in cosmetic creams and powders.*— ('*Practitioner*,' London, May 1956).

How to Maintain Correct Posture?

When, long, long ago, man first discovered that by standing on his hind legs he could see better and further, besides being able to use his forelegs for other purposes, he started something in more senses than one. He started on a course which led to round shoulders, spinal curvature, protruding abdomen with sagging organs inside, flat feet, varicose veins, and so on. Although we now feel more or less at home in the upright position, our marvellously intricate nervous system has not even yet properly adjusted itself..........

Standing, we droop, bending our back, standing with our weight unequally distributed between our two feet, with a consequent tilting of the pelvis and curving of the spine, and putting unnecessary strain on muscles and ligaments from head to toe.

Walking, we slouch, hands in pockets, spine bent the wrong way, head down, chest contracted.

Sitting, we crouch, shoulders stooped, breast-bone and ribs sagging; or we loll back—again with the spine bent the wrong way—chest bearing down on the abdomen. And we do this for hours at a time, while listening to the radio, watching cinemas, reading a book, or knitting.

Is it any wonder that, after a few years of this kind of thing,

our limbs and organs should protest against the unnatural way they are being treated? But there is no need to go on ill-treating them. With a little determination and some common sense anyone can acquire better, if not perfect postural habits. Try this exercise :—

Stand with back to the wall, head, shoulders, and hips touching the wall, and feet four inches from it. With arms hanging naturally, stretch upwards, evenly balanced, with feet pointing straight ahead. Keep looking ahead to a distant point, with the shoulders. (But don't appear to have a ramrod up your back). After a little practice this will come easily.

For sitting, the trunk should be kept in a position similar to that when standing. Bending should be from the hips, keeping head and body in a straight line. The chair in which you are sitting should always allow the feet to rest flat on the floor. If, when resting in a chair, you slump and "fold up" into unnatural contortions which push practically everything in your body out of position, you are asking for trouble, and will probably get it.—(From *Better Health*, London).

FAITH IN DIVINE HEALING

A GOOD deal of correspondence on Divine Healing has been published in the *British Medical Journal* since the publication of the book "Divine Healing and Co-operation between Doctors and Clergy." In the issue of July 21, 1956, a doctor summed up in a letter the subject in this way: "*Prayer and faith must not be divorced from the use of all available medical and surgical services. For, surely, the latter are intended to create better conditions for healing, which is ultimately always divine. If the surgeon removes a gangrenous appendix, or sews up a gastric perforation, the healing of the wounds is entirely by 'nature' which is only a word used so often to avoid acknowledging the God who is the author of the laws by which 'Nature' works. Looking at it in this way, let us acknowledge at once that all healing is divine, in the last analysis.*"

Looking at it in this way means that it is a case of all things to all men; in Pope's words

> "All discord, harmony not understood;
> All partial evil, universal good;
> And, spite of pride, in erring Reason's spite,
> One truth is clear, whatever is, is right."

But is it? A great many people think of Divine Healing in terms of miracles, which implies that Nature's laws may be bypassed, and that no matter how much time and the course of events have entered into the bodily changes manifested by disease, by faith the hands of the clock may be reversed and events eradicated. To tell people that by faith we can move mountains, and then try to explain to them that this means the employment of bull-dozers and giant shovels is not, we think, in keeping with the com-

mon interpretation of the phrase.

The retort may be that we need work as well as faith; in disease we need prevention rather than cure. Faith in cures, and miracle cures at that, is an acceptance of the inevitability of the disease. To try to use divine and faith-healing as an escape mechanism, avoiding facing up to the idea of cause and effect in the prevention and treatment of disease, leads to an easy acceptance of the *status quo*, and the idea of Pope that "whatever is, is right" in medicine and surgery, from the removal of tonsils to the use of the latest polio vaccine.—(*Health For All*, October 1956).

THE NOSE IN YOUR LIFE

IVAN W. PHILPOTT, M.D. and JAMES CHESSEN, M.D.

MOST of us take the nose for granted. We simply think of it as an organ wherein the sense of smell is located and through which we breathe. What it does and how it does it are rarely mentioned or even described in any standard textbook on physiology.

However, literature, history, folklore, and expressions in modern English usage which involve the nose, show it has a definite meaning in our lives and times. Napoleon Bonaparte always chose men with large noses for important missions. Pascal wrote of Cleopatra's nose: "If the nose of Cleopatra had been shorter the whole face of the earth would have been changed." The Tahitians, however, consider it an insult to be called long-nosed. A flat nose was an object of prejudice among the patriarchs of Biblical times, though later, in the time of Attila it was the practice of the Huns to flatten the noses of babies by bandaging. The Eskimos, as well as certain tribes of Indo-China, Burma, and Malaya use the nose in salutation by rubbing noses, described by observers as a salute by smelling or sniffing. In folklore they describe the cure of a cold by kissing the nostrils of a mule. Expressions in modern English usage such as "the nose knows," "right on the nose," and "won by a nose," mean something definite to almost everyone and that meaning gives a different connotation to the nose than its simply being an organ of smell and breathing.

Unfortunately the nose is the only organ that keeps growing throughout life. Furthermore the rhinencephalon, the nasal counterpart in the brain, has some unusual characteristics. It, too, is the only part of the central nervous system centre which is continuing to develop in man. It is a sort of depot or arranging centre for all cerebral activities.

Nose doctors for generations have been studying nasal structure and anatomy in minute detail, and have struggled almost as hard to avoid learning anything about function and the physiology of the nose. Some workers

redescribed the work on air currents which appeared in the German literature of the 19th Century. We know where the air goes, but not why or how.

Dr. Maurice H. Cottle of Chicago is responsible for most of the renewed interest in the subject as to the role of the nose in our lives. His work with this group has stimulated a great interest in this subject and he is the authority for most of the statements in this article.

Why do we have a nasal septum? We don't believe the Good Lord designed the nasal septum, for instance, to be a landing field for eager submucous surgeons. It must have some other function. We doubt if the Lord would go to all that trouble just for the benefit of a relatively few people who can and do earn their living by doing submucous resections! Is it a simple partition to divide the nose into two parts? Actually it divides the nose into two separate and distinct noses. Why is it hard, semi-hard, and soft in different areas? Why is it a fixed solid structure, a semi-mobile, and a mobile structure in different areas? How do the air currents actually pass through the nose? Why is nasal breathing superior to mouth breathing? What regulates the volume, velocity, direction eddies, and intra-nasal pressures of the air currents? Most important of all, why must we have resistance in the nose for good breathing? What happens when one or more of these structures does not do its particular job?

The functions of the nose comprise breathing, smelling, articulation and testing. Some believe it is also an organ of well-being, or good living. A study of nasal structures is important but only as they pertain to activity and integrated function of the nose and even the body as a whole.

Air enters that part of the nose called the vestibule which is guarded by 2 sentinels acting as "baffles." They are the first resisters and traffic directors for the column of air entering the nose. These and other baffles split the column of air into sheets or laminæ and after passing to the upper lateral cartilage "valve," the air rises to the upper regions of the nasal chambers where olfactory nerve endings and the afferent nerves of the nasal thoracic reflexes are stimulated. Only when all nerve endings are stimulated the patient has the feeling that he is breathing well, and of well-being.

As we look into a normal nose we see only a slit-like passage through which the air must pass. This increases the pressure with which air is received and with which air is expelled through the nose. The upper lateral cartilage is attached to the under surface of the nasal bones. This attachment is a gentle one, by loose connective tissue. Actually the upper lateral cartilages are wings of the septum, but of great importance is the gradual but definite change from an acute angle at its caudal fibrous attachment to the septum, to an

obtuse angle at the nasal bones. It is by this attachment that we have a definite valve formation that allows the upper lateral cartilage to swing closer to the septum on inspiration and away from the septum on expiration.

Anatomically the septum creates two noses. This, according to Cottle, allows one side to rest while the other side does the work, as during sleep. The hard portion of the septum serves the primary function of resistance to the air-stream. It aids in the formation of the dorsum and helps to support the upper lateral cartilage. It supports the respiratory epithelium and has a direct relationship to all the structures of the nose.

Resistance in the nose is very important in respiration; why? Here is a relatively small calibre "tube," so to speak, imparting 46% of the resistance of the entire respiratory tract. It is because muscle action *per se* depends on the resistance of load which it must work against or overcome. In respiration it is this resistance offered by the nose which puts a load on the accessory muscles of respiration and we have initiated the enlargement of the thorax and the breathing cycle. In normal quiet respiration this is, of course, an automatic function; but what takes place when there is the need for more oxygen intake, such as in exercise? When the oxygen need is great the resistance is increased by simply narrowing the canal and offering a greater work-load to the accessory muscles of respiration. As a result they contract still more to overcome the increased resistance offered with a resultant increase of oxygen-intake. The eddies of air waft over the nerve endings and thereby set the reflex mechanism in action.—(Condensed from *Rocky Mountain Medical Journal*, October 1954).

Comment.—The authors in a humorous vein call attention to our shortcomings and gently chide us for accepting uncritically the teachings of the past. It is refreshing to learn that it is not only GP's who have a limited knowledge of the physiology of the nose. Perhaps I should resent any comments about my nose because it is the only one I have in running condition!—Edwin Matlin, M.D.

The Song of the Tubercle Bacillus

Dr. Gardner Middlebrook Director, Research and Laboratories, National Jewish Hospital at Denver, and Associate Professor of Microbiology, University of Colorado School of Medicine, concluded his principal report to the first scientific session of the Fourteenth International Tuberculosis Conference held at Delhi on 7-1-'57, with a song of the tubercle bacillus as follows :—

The tubercle bacillus, like the river
Flows slowly o'er the land
Thru' centuries it has wound its way
Relentless here, abating there—
Fickle unto death.
Sometimes wide and shallow—
sometimes deep and narrow.
Weaves it back and forth
from one shore to another.
Lest some brief illusion o'ertake
men who build a little dam
To hold its flood—
To build a safer bank
Takes time—
Since the tubercle bacillus, like the river
Flows slowly o'er the land.

Dr. Middlebrook was presiding over the first scientific session, which discussed the diagnostic and biological problems of isoniazid-resistant tubercle bacilli. Tubercle bacilli are germs which cause tuberculosis.—*(The Mail).*

NOT SO EASY TO TAKE IT EASY

Dr. W. SCHWEISHEIMER

WHAT makes a "tired business man" tired? To find an answer to that clinical question, more than 2,000 "tired business men" were examined in the Benjamin Franklin Clinic of the Pennsylvania Hospital in Philadelphia. Many patients came from industrial and business concerns whose owners wanted to take care of the health of the leading employees. In fact, one Philadelphia industrialist sent all sixty-three of his executives in for a check-up. Eighty per cent of them needed medical, surgical, or psychiatric treatment.

The psychiatrist was needed in most cases, to convince the executives they must slow down and *stop worrying*. Dr. Leonard W. Parkhurst, the clinic's medical director emphasized that the executives "must be *bosses* of their jobs, *not slaves* to those jobs." To follow such advice means the difference between the healthy business man and the one on the verge of an emotional or physical breakdown.

Why tired?—The Benjamin Franklin Clinic stated that a tired business man gets that way because he :—

1. Stuffs his business troubles in his brief-case and carries them home at night instead of leaving them at the office.

2. Goes out to lunch and does more business talking than eating.

3. Cannot take a real holiday because he cannot delegate authority ; he foolishly imagines he is indispensable !

4. Does not have a day-in, day-out hobby but goes out once a week for a strenuous physical work-out to cure all his ills.

5. Does not know, or practise, moderation in either work or play.

The most common physical ailments found among Philadelphia business men as reported by the clinic were :–coronary artery disease, diabetes, high blood-pressure (hypertension), and ulcers of the stomach.

There are always some people, tough supermen, who can stand the rush of modern business-life without punishment. But to the majority of both workers and executive, it means physical harm and nervous trouble.

A frequent consequence is a sort of nervous irritation which may be *hidden for some time*, but which suddenly becomes obvious in unexpected contacts with other people. It means quibbling and quarrelling over trifles, it means unnecessary friction.

Dr. Dershimer, Du Pont's psychiatrist, says one of his biggest difficulties is getting supervisors to be frank with men whose work is below standard. He thinks bosses should be frank with subordinates, tell them where they stand. Otherwise an employee doesn't know whether he is good or bad, needed or not, and thus builds up a sense of disinterest in his job. Dershimer believes that this tendency

among bosses is based more on the boss's desire to spare himself an unpleasant task, than to his concern for his subordinate's feeling. Sometimes the productivity of a whole department will drop, simply because the boss does not get along with its members. Treating the boss's malady therefore, may mean relief for the whole department.

The Benjamin Franklin Clinic's prescription is: *'Take it easier'*. However, it is not so easy to take it easy. This is the result of studies by Prof. Josephine L. Rathbone of Teachers' College, Columbia University. "Most adults," she says, "do not know how to relax. They are dissatisfied with their achievements, and drive themselves to get more and more done each day. Suddenly, one day, they come down with ulcers, high blood-pressure, diabetes, or a physical breakdown."

Contrary to popular notion, Dr. Rathbone says, "tense people do not always appear nervous. They usually don't bite their nails, crack their knuckles, twist their handkerchief. Instead, they often appear very calm, because they restrain themselves. They try to keep themselves immobile because they fear they will reveal nervousness by movement. By holding themselves still, however, they are increasing their tensions"!

A person who is overfatigued is likely to overwork, Prof. Rathbone pointed out. When a person is too tired, he seems to lose all sense of perspective, and welcomes a breakdown as eagerly as a holiday. This overactivity takes on two particularly dangerous forms *viz.*, (1) over-addiction to business; and (2) immersion in a social whirl-gig.

Undue strain and continuous nervous hurry are particularly harmful to the coronary arteries, those important blood vessels which bring food and energy to the heart muscle itself. Coronary disease can be limited in its effect to observance of a proper routine of living, eating, and exercise, with some relaxation to break the tension of the day.

Sleep is the most important source of recovery and rejuvenation for everybody. Many "tired business men" either suffer from a form of insomnia or do not recognize the recuperative value of sleep. Some people think it is a waste of time to sleep, while others cannot slow down their pace, and their mind cannot rest sufficiently to fall asleep. Some hints to help induce sleep in such cases are given by Prof. Rathbone :—

"Prepare for sleep by cutting down on the intensity of thinking for half an hour or more before retiring. Take plenty of time to get ready for bed. Nobody should expect to leave his work or a heated discussion in a state of exhilaration and, tearing off his clothes and bouncing into bed, fall immediately into deep slumber.

"Instead, take a leisurely bath, brush your teeth, comb your hair and prepare your clothes for the next morning. One of the best ways of falling asleep is to get

rested before trying to sleep. By getting into bed an hour before the usual time for retiring, you will find yourself building up a reserve of rest, and able to fall asleep without the old struggle.

Most remarkable is the influence of lazy bowels, chronic constipation, on sleep. The poisons produced by stagnant bowel contents are being absorbed into the blood and they produce the feeling of tiredness, fatigue by day, and insomnia by night. Care for proper bowel movement by a generally more stimulating diet may alone be sufficient to get better sleep. And an enema before bed-time in such cases might prove to be a sleep-procuring remedy.—(*Good Health*, London, October 1956).

THE LAST FRONTIER

THERE was a man who recovered from bronchitis and said to his doctor at the end of his illness "this was worse than the bombing." It was not a very bad case of bronchitis. He was not very seriously ill. Yet, to this man it had been a real crisis of his life–something worse than the terrible moments in the London blitz when life seemed to hang on a spark.

Illness of a severe kind is nearly always a jolt to the system, especially in one who, 'enjoys good health'. Now there are many people who, as we all know, *enjoy bad health*—that is, *get real enjoyment out of it.* Rather a morbid kind of enjoyment, you will think, yet something which has to be taken into account. For them, an illness is no surprise but even a gratification. But we are thinking of the average normal person, who finds a serious illness something horribly memorable.

He lies in bed, as near helpless as he has ever been before. He realizes for the first time what it is to lose the power of locomotion, power over the normal healthy functions. Since he was a child, no such mental illumination has ever occurred, a shocking thought crosses his mind—"suppose I were never to pull out of this ?"

At that particular moment some one—a consoling wife or an attractive nurse—is sure to come along to hustle him out of it with a bowl of water to wash. The disturbing thought remains: "suppose I should never come out of this ?"

Illness has created for that man—as for any of us—a new frontier, crossed for the first time —without a passport, or luggage, indeed without the slightest desire to get there.

Do you remember the classic legends of heroes who went into Hades ? They crossed in a rowing boat paddled by an old man called Charon. Ulysses himself was one of them—and returned with a number of tall stories.

Serious illness is like that—although we do not really cross over to the other side—except in dreams. What is to be made of this experience ? Has it any

value for a healthy man and woman? Is it to be passed off with a shudder, merely ignored. Or is it to become a permanent part of our lives?

There is, I suppose, a new frontier in every one's life, something crossed on rare occasions. It is the one deeply personal thing we have. On the whole I think never to have crossed it, is to miss something. This is not morbid, or to say everyone must necessarily be ill. Nor is it to say we should seek out illness as a means of crossing frontiers.

With the best possible intentions of avoiding it, we are likely to be given an opportunity one day, whether we wish it or not. Few healthy people escape at least one rather serious illness. They may cross a frontier, and come back into fuller possession of the country they own, on this side of the frontier. If illness can teach us how to enjoy good health, we have indeed learnt something.—(Editorial in *Health Horizon*, Autumn, 1956).

THE GREATEST TASK

"WITH all man's progress, his "civilization," and his vaunted scientific advances and enlightenment, health statistics show that he is far from lessening the total of disease, pain, physical mental weakness and the unhappiness which they cause.

The reason is that there is still little or no understanding of the fundamental issues concerning human life and the laws which govern it. If such an assertion appears to be far-fetched, let us examine, with as little prejudice as possible, the attitude of the man in the street towards matters of health.

Thanks to press and radio propaganda, he knows something about the "miracle drops," so-called, but he knows very little about the effects on his health of his day-to-day habits of living and feeding. He may know that obesity is the result of over-eating, particularly of the starchy foods, but he does not know that the same habit may underly other everyday ailments, such as colds and catarrh, for instance. Nor does he realize that lack of sufficient exercise and fresh air are also contributory causes of the same troubles. Instead, he continues to blame a germ, or a chill, and places his reliance for a cure on a bottle of medicine or a box of tablets. He rarely asks himself *why*, or *how*, a few doses of physic should be expected to restore him to health.

If a man were to bruise his finger with a hammer, he would rightly ridicule the suggestion that, even though he continues to hit his finger with the hammer, it will get well, provided he applies a local anæsthetic to deaden the pain. And yet that is exactly the kind of reasoning which is accepted without question in the orthodox treatment of internal aches and pains and disorders. Medicine is taken to relieve the symptoms of disease,

but nothing is done to eradicate the causes.

It is quite true to say that the patient often *gets well in spite of the "cure,"* but there is a limit to the body's. tolerance of such abuse, and if its efforts to cleanse itself are suppressed repeatedly, there can be no other outcome than a progressive deterioration of health, and the gradual onset of a more serious and chronic disease.

In the face of such widespread ignorance and misunderstanding, what is needed is not a "health" service which does little more than provide palliative drugs for acute disease and, ultimately, more potent drugs and radical surgery for advanced cases, but the dissemination of true knowledge of health and disease throughout the community—to both lay and medical men," says Stanley Lief in *Health for All*.

FOOD HYGIENE AND THE PUBLIC

DENNIS GEFFEN and S. W. CAPELL

THERE is no easy way, even for the expert, to decide that any food is so contaminated as to be liable to cause food poisoning. Prevention lies in avoiding foods that have been so handled and prepared as to render them liable to contamination.

There is very little difficulty in deciding on the factors which may make food dangerous and which should be avoided. The shopper, the diner-out, be he in canteen or restaurant, should observe the general cleanliness of the premises he patronizes and the personal habits of the individual handling the food. He should notice unguarded coughing or sneezing as well as the unhygienic practice of blowing into paper bags, finger licking and smoking, scratching parts of the body when engaged in the handling or preparation of food. In restaurants and canteens the condition of cups, saucers, forks and spoons should be noted, and it is important to observe if the cutlery is handled by the end which comes in contact with the food.

In all food premises, food should be protected from dust, dirt and animals. A swarm of flies in a shop or restaurant is a sure sign that something is very wrong.

In the home the same precautions in regard to the handling and preparation of food should be observed. Scouring and filtering cloths, swabs, and dish cloths should be cleaned with hot water and a detergent and boiled in hot water after each day's use or they will become reservoirs of harmful germs.

Temperature plays a very important part in the growth of germs; under ideal conditions germs can multiply by splitting into two every twenty minutes and in this way a single organism could increase to over two million in seven hours!

Refrigeration does not kill bacteria, which however, cease

to multiply below about 45°F. Between 45°F. and 60°F. they will multiply slowly and the rate of multiplication increases up to about 100°F. From about 100°F. to 145°F. the multiplication slows down. Between 145°F. and 212°F. (boiling point) nearly all pathogenic organisms are destroyed. The length of time necessary to do this depends on the temperature between these ranges—that is to say half an hour is necessary between 145°F. to 150°F., ten minutes at 160°F., and a few minutes only between 160°F. to 212°F.

In short, it is to be observed that perishable foods, should be kept either very hot or very cold. The "just warm" temperature is the danger signal. The refrigerator should not be in a restaurant kitchen, because of warm air entering it whenever it is opened. Its temperature should be checked frequently with a reliable thermometer, especially in summer.

Another point to bear in mind is that in a warm kitchen bacterial action will go on as quickly in winter as in summer.

All fresh meat should be washed before being cooked. Meat should never be partly cooked nor should it be kept wrapped up in the paper in which it is brought home. It should be unwrapped as soon as possible and if it cannot be kept in a refrigerator it should be placed where it will be cool and where there is a good circulation of air. The fat on good meat is clear, firm and well-defined.

It is always advisable to wash fresh fish, though in fact fresh fish are rarely the cause of food poisoning. Meat and other pies are best stored on a grid in the meat safe, in a refrigerator, or in some other cool place, ventilated and protected from flies.

The best temperature for storing meat pies is 45° to 50°F. Pies should not be stored below 45°F. nor should they be stored in ice-cream or frozen food cabinets.

Canned foods should be and in fact are the *safest of all foodstuffs, provided that there has been selection of good food, careful processing and perfect canning.* Canned foods remain sound for a long time provided they are not opened. Once opened the same precautions must be taken against contamination as apply to uncanned food. There is no truth in the commonly held belief that food cannot be left in the tin once it is opened. A well-lacquered tin will not taint food even after it has been opened.

A tin should be concave at both ends; if it is convex this means that the food inside it has generated gas due to bacterial fermentation and it should be rejected without any hesitation.

These are but some of the points which should guide the public in choosing the right restaurant, and in determining whether food is intrinsically good or bad.

Undoubtedly the tradesman who knowingly sells diluted milk should be prosecuted; he is a cheat and a swindler. The careless owner of dirty food premises

deserves no sympathy, and anyone who offers food for sale knowing it to be unsound, or having bought it at a price which he knows belies its innocence, is worthy of no mercy from the official.

There is, however, another side to sanitary and preventive work, and that is the patient, daily co-operation with the food manufacturer, handler and vendor. If a sample of ice-cream does not come up to standard then the food inspector may spend hours with the manufacturer going over every detail of his plant and its process. It would be no exaggeration to say that in conjunction with wealthy and big food enterprises, health officers spend days and weeks, assisted by regular bacterial tests at each stage of manufacture, in order to seek out and find a fault.

But it is not officials who will entirely eradicate bad practice in food hygiene ; it is the public, the customer, that can effectively do this. They should refuse to eat in a restaurant where utensils are broken or dirty where flies abound and where the assistants are dirty in person or clothing. A fine and immaculate restaurant may hide a filthy kitchen. We do not think that this is often so, and an immaculate waiter is seldom provided with food from a dirty kitchen hand. In any case the public sees the restaurant, the food inspector sees the kitchen, and if the customer does his part it helps the health authorities to do theirs. Perhaps it needs pluck to send back food because it is served on a cracked plate by a dirty waiter. If you think of it carefully you will realize that it takes more pluck to eat it!—(*Health Horizon*, Autumn, 1956).

Eating should be a Joy

When the dietitians and scientists have had their say, the only food that does you good is what you assimilate and use. You get most from what you eat when you enjoy eating with good appetite and eagerness. Eat when your mind is happy, or at least tranquil, but eat warily or not at all when emotionally upset with anxiety, anger, or frustration, for when your mind is upset, your digestion is disturbed also.—(*Good Health*, Oct. 1956).

The Catarrhal Child

"There is a kind of child, very obviously catarrhal, whose mother regards him as delicate and a cold-catcher. The most obvious thing about him, next to his catarrh, is that he is grossly over-clothed. Srtipped of his wrappings, he is moist with sweat—he almost steams. He lives, day and night, in overheated rooms. He is coaxed to eat more than he wants, and his exercise is restricted because he would 'get overheated,' and then 'take a chill.' What can the doctor do about him ?"—(*Health Horizon*, Autumn, 1956).

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Patriotism

Breathes there the man with soul so dead who never to himself hath said, "This is my own my native land ?"—(Sir W. Scott).

THE MYSTERY AND MISERY OF BACKACHE

ERNEST HAVEMANN, M.D., London

Of all the victims of ailments which beset the human race, the man with a backache is in many ways the most pathetic. This ailment probably causes more general discomfort than anything except the common cold.

Many of our work and play habits are conducive to backache. The manual worker who uses his back a lot has to be in almost perfect physical shape and should never let a day pass without strenuous exercise. Yet he often spends his spare time sitting over a cup of tea, *pan supari* or/and a pack of cards. On the other hand, the sedentary office worker often spends his week-ends pretending he can mow the lawn in the morning, play badminton in the afternoon and then spend most of the night in cinema.

Housewives frequently get up from child-birth and plunge right into their work, which is about as strenuous as a carpenter's job.

The sedentary life itself is a threat to the back. The typist, for example, commonly sits erect in his or her chair with the arms stretched and the posture rigid. In this position the whole weight of the upper part of the body must be supported for hours at a time by the lower back muscles. The newspaper proof-reader hunches over a desk, always tilted a little to his left as his right hand wields a pencil. Such people keep certain sets of back muscles tensed in one direction, and these muscles grow fatigued while their opposite numbers grow weak from lack of exercise.

The sedentary worker also often finds himself in a position where he has to call on his back muscles for a strenuous effort without preparation for it.

In great-grandfather's day people with aching backs were usually told by their doctors that they had "lumbago." Although this term made the patient feel that he had something specific to blame, it was actually only a synonym for backache. A little later the popular names became "sciatic rheumatism" or "sciatica," which were just fancy ways of saying that the patient had leg pains along with his lumbago. A few years ago everybody was blaming a weak or sprained sacro-iliac, which is a joint supported by the major ligaments in the lower back region. Today experts agree that the sacro-iliac ligaments are among the strongest in the human body.

The spinal column is composed of 33 vertebræ (34 in some people). Each consists of a piece of bone like a slice cut out of a broomstick, from which bony appendages project to form an archway at the back. Through these openings passes the spinal cord. The lowest 9 or 10 vertebræ are more or less fused together at the base of the spine into two structures known as the sacrum and coccyx.

The vertebræ are cushioned from each other by little slices of tough rubbery material called discs, but are bound together into a strong and fairly stable column by a long structure of ligaments the strong, tough white tissue that binds bone to bone at each joint of the body—and also by a complicated series of muscles running the full length of the spine from neck to coccyx.

Animals that move on all fours seldom have trouble with their spinal apparatus ; their weight is mostly suspended from the posterior processes of the spinal column, held like a suspension bridge by strong bands of muscle. Man, however, defies gravity by standing erect. His back muscles have to work 16 hours a day just to hold him up. He bounces up and down on his spine, putting a heavy load of weight and shock on the discs. When he bends over to pick up a shoe he exerts a great strain on his lower back muscles, since the bend comes at a point (called the lumbo-sacral joint) which is like the fulcrum of a lever.

The family doctor who hopes to cope successfully with his numerous backache patients finds himself confronted by a baffling array of medical theory. Some specialists believe that perhaps 80% of all backaches are caused by muscles too weak or stiff to do the work for which they are called upon. The basic tenet of muscular-fitness enthusiasts is that some people have let their backs grow so weak through lack of exercise that they are in dire danger of aches if they so much as shake hands too vigorously.

But poor physical condition does not account for all back ailments. Many orthopædic specialists say that a number of the most severe backaches stem from what is popularly known as the *slipped disc*, a phrase almost as common today as was lumbago a half century ago. A disc has a relatively soft and pulpy interior, encased in a tough fibrous ring and two cartilaginous plates. Sometimes these discs rupture and the pulp protrudes a little. Sometimes the pulp squashes out altogether and the disc practically disappears, leaving the two vertebræ without a cushion. This is known as a degenerated disc. In each case the disc usually affects nerves, causing pain to radiate down the buttocks or legs—the excruciating condition known as sciatica.

Some doctors operate, either snipping away the part of the disc that touches the nerve or removing the disc, sometimes fusing the two vertebræ which it formerly separated. But many conservative orthopædic specialists hold that the pain from a slipped disc is usually caused by swelling of the nerve, and that the swelling can be reduced and the patient restored to functional activity by proper treatment, which consists mainly of rest, followed perhaps by wearing a brace and doing special exercises.

A different approach is typified by a group of doctors at Bellevue Medical Centre, New York, who say that so many bad

discs have been found in *post-mortems* on people who never complained of back pain that the damaged disc can hardly be considered the main villain. These doctors believe that most back cases are accompanied by functional impairments: that is, muscles and ligaments are working badly, and the trouble is not the result of a condition which could be seen in an X-ray or detected by a post-mortem.

Just as the muscles of the hand grow painful from the unaccustomed work of carrying a heavy suit-case, so the muscles of the back may give out if not rested at suitable intervals. One explanation of this is that the blood stream cannot carry away all the lactic acid, carbon dioxide and other chemicals which the muscle produces when hard at work. These products accumulate in the muscle tissue and finally set up an acute or chronic irritation.

On the basis of more than 1,000 cases, the doctors at Bellevue Medical Centre concluded that about 60 per cent of backaches were caused by muscular strain, the sprain of a ligament or the stress of bone against bone, and another 30 per cent by muscular fatigue. They do not believe that the answer is simply better physical fitness. Instead they try to determine the cause of the strain or fatigue and eliminate it. Often this means urging the patient to act his age and *give up activities which are now beyond his muscular capacity.*

One doctor says, "You tell a man that his back trouble is caused by lifting heavy loads into a lorry and he says, 'Don't be silly, Doctor. I've been doing it for 35 years.' It's hard for him to realize that this is precisely the reason he can't do it now. We might say that one big cause of backache is that we have to live through the difficult period when we're too old to work but too young to retire."

Most doctors believe that a good many cases of backache could be avoided if everybody observed the following rules:

Life with the legs, not the back.—Reach down for an object by bending the knees and squatting keeping the back straight as you go down and come up again.

Avoid over-exertion.—Remember that the average householder is foolish to dig up a sizeable garden patch in a single morning, or try to lift an almyrah.

Exercise regularly but by easy stages.—Start the golfing season with an easy session of chip shots and putting instead of playing 18 strenuous holes.

Change position as often as possible.—Avoid the cramped muscles of the immobilized typist.—(Condensed from *Life*, via *Reader's Digest*, October 1956).

Children's Colic

Colic from eating too much raw fruit: give them a small cupful of a salt-spoonful of ginger, brown sugar, and hot milk, for quick relief. Encourage them to eat a whole-meal biscuit, rusk, or slice of bread with juicy fruits to prevent trouble.

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